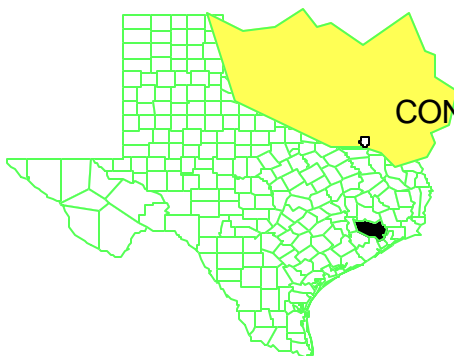


HIGHLANDS ACID PIT TEXAS

EPA ID# TXD980514996



EPA REGION 6
CONGRESSIONAL DISTRICT 25
Harris County

Updated:06/04/99

Site Description

- Location:**
- ! 15 miles east of Houston, north of I-10.
 - ! 1-1/2 miles west of Highlands, Harris County, Texas.
- Population:** Approximately 5,000 people.
- Setting:**
- ! The nearest residence and drinking water well is 2,000 feet from the site.
 - ! The six-acre site is located on a peninsula in the San Jacinto River, surrounded on three sides by water.
 - ! The site is currently fenced with a grass cover on replacement fill material.

Hydrogeology:

- ! The site is prone to flooding, and is within 10-year river flood-plain basin.
- ! Soils are sandy, approximately 25 ft. deep, with 30 ft. of clay below that.
 - ! A shallow aquifer in the upper sand is contaminated, and connected to surface water; the next lower aquifer is not contaminated.

Wastes and Volumes

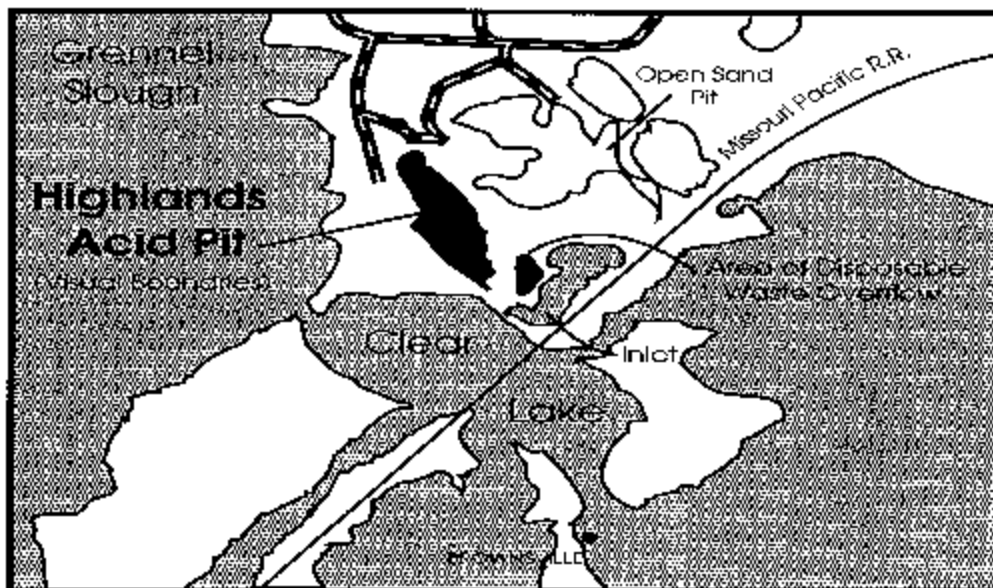
- ! The principal pollutants at the Highlands Acid Pits site fall into two categories:
 - 1) Organic compounds: Toluene, benzene, phenol, xylenes.
 - 2) Inorganic compounds: Sulfate, manganese, arsenic, cadmium, lead, beryllium.
- ! Waste sludge has mixed with soil and leached contaminants into the upper aquifer at concentrations above Mean Concentration Level (MCL) values in aquifer.
- ! Approximately 22,200 cubic yards of waste and soil (33,000 tons) were removed during cleanup.

Site Assessment and Ranking

NPL LISTING HISTORY

Site HRS Score: 37.77
Proposed Date: 7/30/82
Final Date: 9/08/83
NPL Update: No. 1

Site Map and Diagram



The Remediation Process

Site History:

- ! Industrial waste sludges were deposited in on-site pits in the early 1950s.
- ! In 1961, the site flooded due to Hurricane Carla, possibly causing a fish kill in Clear Lake.
- ! In May 1984, EPA constructed a fence around the pit to prevent further illegal dumping and to protect monitoring wells from vandalism.
- ! In July and August 1985, the site was vandalized. EPA repaired the fence and posted warnings.

Health Considerations:

- ! The nearest drinking water well is within 2,000 feet of the site, creating a potential for human ingestion of contaminated ground water.

Other Environmental Risks:

- ! Heavy metals and organics emitted strong odors during hot weather prior to remediation.
- ! Site contaminants have been discovered in run-off and ground water.
- ! The area is subsiding, and portions of the site are under water.

Record of Decision

Signed: June 25, 1984 (Source)
Signed: June 26, 1987 (Groundwater)

Source Control:

- ! Extensive excavation of waste and heavily contaminated soil (depth of excavation approximately 8 feet).
- ! Off-site disposal of excavated material.
- ! Back-fill pit, then grade, seed, and fence the area.

Ground Water:

- ! "No Action" - no health threats are anticipated once the Source Control remedy is complete. Therefore, a "No Action" remedial alternative was appropriate for the Ground Water cleanup phase.
- ! Despite its name, the "No Action" remedy includes installation of ground water monitoring wells, and a 30 year monitoring program for both ground and surface water.

<u>Other Remedies Considered</u>		<u>Reason Not Chosen</u>
<hr/> Source Control <hr/>		
1.	"No Action"	Did not meet statute
2.	Site Management	Excessive costs, floodways encroachment, incompatible with desired land uses.
3.	Infiltration Control	Technical uncertainties due to cracking and deterioration.
4.	Excavation to Clay	Costs six times that of extensive Layer Excavation alternatives without providing many additional benefits.
5.	Waste Encapsulation	Technical uncertainties due to cracking deterioration. Unreliability under site hydrogeologic conditions and type of Waste materials.
6.	RCRA Equivalent Landfill On-Site	Excessive cost with few additional benefits.

Other Remedies Considered		Reason Not Chosen
<hr/>		
Ground Water		
1.	Slurry Wall Containment	Unreliable under site geologic and hydrogeologic conditions.
2.	Recovery and Deep Well Disposal Off-site	Noncompliance with Land Restrictions for treatment of contaminations in water and sludge.
	Recovery, Biological Treatment, Partial Discharge, and Off-Site Disposal	On-site treatment would result in potential exposure risk due to site location characteristics.
	Carbon Treatment, Partial Discharge, potential and Off-site Disposal	On-site treatment would result in exposure risk due to site location characteristics.

Community Involvement

! Community Involvement Plan: Developed 12/82, revised 5/84, and again in 12/87
! Open houses and workshops: 4/91; EPA and TNRCC conducted survey with nearby residents 6/94 to assess interest.
! Proposed Plan Fact Sheet and Public Meeting: 5/84 (Source Control), 5/87 (Ground Water)
! ROD Fact Sheet: 6/84 (Source Control), 6/87 Ground Water
! Milestone Fact Sheets: 3/83, 3/87, 4/87, 7/87, 8/88 (TNRCC), 10/90, 4/91 (TNRCC), 5/94
! Citizens on site mailing list: 100
! Constituency Interest: Medium profile site, primarily due to close proximity of the Liberty Waste Disposal site
not a Federal Superfund site, but still a concern to local citizens).
! Site Repository: Houston Central Library, Government Documents Area, 500 McKinney Street, Houston, TX 77002

Technical Assistance Grant

! Availability Notice: 4/89
! Letters of Intent Received:
1. LIFT Endowment Fund, Inc. - 2/8/90 (withdrew Letter of Intent 8/20/90)
! Application received: None
! Grant Award: N/A
! Current Status: No applicants during site study, remedy selection/design or construction phases.

Contacts

! **Remedial Project Manager (EPA):** Ernest R. Franke, PE,LS 214-665-8521, Mail Code: 6SF-AT
! **State Contact:** (TNRCC) Emmanuel Ndame, 512-239-2494, Mail Code 143
! **Community Involvement Coordinator (EPA):** Donn Walters, 214-665-6483, Mail Code: 6SF-P
! **Attorney (EPA):** Ann Foster, 214-665-2169, Mail Code: 6SF-DL

! State Coordinator (EPA): Karen Bond, 214-665-6682, Mail Code: 6SF-AP

! RAC Contractor: Tetra Tech EM, Inc.

Present Status and Issues

! The construction of a fence to limit access to the site lessened the actual exposure potential even though surface contamination cleanup goals were fully achieved.

! Two years of initial O&M were conducted to confirm protectiveness of human health and environment through all routes of migration.

! A five year review was completed in June, 1996.

! The site is now under Federal Lead, RACS contract with scheduled completion date December, 1999 for Remedial Action (RA). The two year RACS contract began in March 1997 to add additional monitoring wells, conduct sampling and analysis for eight quarterly sampling events of which the sixth event was completed and the results reported in May 1999.

! The Final pump test report including tidal study was prepared by Tetra Tech, is complete and mailed to EPA and the State of Texas (TNRCC) on November 19, 1998.

! Tetra Tech is currently preparing a scheduled work plan for a site Risk Assessment . Upon completion of the eighth sampling event and the Risk Assessment, Tetra Tech shall submit a Comprehensive final RA Ground Water Report.

! A gas and oil well (Johnson Peace #1) was constructed during March and April, 1999 for owner, Etoco Inc. of Houston, Texas, by B & J Consultants, north of the site most northerly monitoring wells , which was authorized by the Texas Railroad Commission Permit #482755.

! The last of the eight site sampling events has been completed , data from the eight events is being compiled, and a final groundwater report is being prepared by Tetra Tech.

Benefits

! Remedy construction and operation at the Highlands Acid Pits has effectively reduced risk from 22,000 cubic yards (33,000 tons) of contaminated industrial sludge.

! The San Jacinto River has been protected from offsite migration of wastes precluding fish kills similar to prior events.